to treat the ascending aortic and arch pathology in the standard open surgical fashion and follow the progression of the descending thoracic aorta. As Dobrilovic and Elefteriades[1] expertly point out, expansion of the descending thoracic aorta after acute type A dissection may be a slow process. There may, however, be additional reasons to consider simultaneous hybrid repair in this situation.

Total arch replacement involves the use of deep hypothermic circulatory arrest (DHCA). The increased risks associated with this technique have been well documented, and eliminating DHCA for the treatment of acute Type A aortic dissections would potentially make this a safer and better tolerated procedure. Another alternative hybrid approach would be to repair the entry point tear in the ascending aorta with standard open surgical techniques (interposition graft or ascending conduit) and simultaneously bypass the great vessels with grafts off the newly completed ascending aortic graft. Simultaneous deployment of an endoluminal graft in an antegrade fashion through the ascending graft, across the aortic arch, and into the proximal descending thoracic aorta would accomplish a total arch reconstruction without the need for DHCA.[3] This approach maximizes the advantages of endovascular technologies by making a complex procedure less invasive while stabilizing the true lumen of the descending thoracic aorta. We have shown that stabilizing the true lumen in the descending thoracic aorta is an active process that in time leads to progressive expansion of the true lumen and continued thrombosis of the false lumen.[4] In addition to potentially preventing future complications and need for reoperation, stabilization of the true lumen and continued active true lumen expansion after thoracic endografting can potentially improve distal organ perfusion.

Hybrid approaches to complex aortic pathologies may allow us to offer surgical repair to patients with acute type A aortic dissection who might not otherwise tolerate DHCA. The less invasive advantages of simultaneous arch exclusion with an endoluminal graft after great vessel transposition could accelerate patient recovery and provide the added potential advantage of distal true lumen stabilization. I therefore believe that the surgical paradigm may be shifting toward hybrid approaches, not away from them.

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Reply to the Editor:

We appreciate the thoughtful commentary from Dr Wheatley. We are aware of the imaginative work being done in catheter-based treatment of aortic diseases at the Arizona Heart Institute.

There are certainly many clever ways to "manipulate" the anatomy of the aortic arch to make stent therapy feasible, and we applaud the exploration of these techniques. We disagree, however, with the undercurrent of fear of deep hypothermic circulatory arrest (DHCA) manifest in Dr Wheatley's letter.

DHCA is a proven modality in aortic surgery, with a vast clinical experience demonstrating its clinical utility and safety.[1-4] At our own institution, Dr Arjet Gega has just completed (for upcoming submission) a review of 400 patients operated on under "straight" DHCA, without any adjunctive retrograde or antegrade cerebral perfusion. This experience included all comers: ascending, arch, descending, and thoracoabdominal; elective and emergency; and ruptured and nonruptured. Overall mortality was 6.5%, stroke rate was 4.9%, and reexploration for bleeding was 3.9%. Cerebral protection was excellent, with most strokes embolic in origin. The supposed bleeding diathesis of DHCA is simply not a problem. It is not uncommon for us to find the morning's DHCA patient extubated, vibrantly conversant, and having a light supper by the time of evening rounds. DHCA need not be feared. At our institution we marvel at the protective abilities of this technique, and we are pleased to call upon them at every opportunity.

Current results for surgery under DHCA at many expert centers worldwide sets a standard that will be hard to exceed with clever extra-anatomic and catheter based modalities. In fact, it remains to be shown in careful analysis of large clinical series that the alternative modalities can even come close to meeting the excellent results of traditional, direct arch surgery under DHCA.

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When less is more: Go slowly when repopulating a decellularized valve in vivo!

To the Editor:

We read with interest the recent article by Juthier and colleagues[1] describing the effects of granulocyte colony-stimulating factor (GCSF) on decellularized xenogenic heart valves implanted in systemic circulation in sheep. The hypothesis was tested